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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,539	02/17/2004	Rajiv Laroia	060569	7486

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EXAMINER	
SHAND, ROBERTA A	
ART UNIT	**PAPER NUMBER**
2416	

NOTIFICATION DATE	DELIVERY MODE
10/16/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/780,539	LAROIA ET AL.	
	Examiner	Art Unit	
	Roberta A. Shand	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *6/25/2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-17 and 26-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17 and 26-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims claim 1, 26, 30, 36, 39, 42 43 and 44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The language " plurality of possible NAK signal values, each NAK signal value, in the plurality of NAK signal values, differing from any other one of the NAK signal values in said plurality by an amount which is less than the smallest amount any one of said NAK signal values differs from said ACK signal value" is vague and indefinite

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-11, 13, 14, 16, 17 and 26-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang (U.S. 2002/0060997 A1) in view of Nagase (U.S. 6904555 B2)

3. Regarding claims 1, 26 and 42, Hwang teaches a communications method and device, the method and device comprising: operating a first communications device to: perform a decoding operation on a first signal including encoded signal information (paragraph 71); determine if the encoded signal information included in the first signal was successfully decoded (paragraph 71); when it is determined that said encoded information was successfully decoded, generating an ACK signal having an ACK signal value (fig. 6).

4. While Hwang does teach using NAK signals, Hwang does not explicitly teach when it is determined that said encoded information was not successfully decoded, generating a first NAK signal having one of a plurality of possible NAK signal values, each of said plurality of possible NAK signal values corresponding to a different level of decoding success.

5. Nagase teaches (col. 4, lines 10-20) a decoding method with retransmission according to the degree of error. This reads on applicant's NAK values. It would have been obvious to one of ordinary skill in the art to adapt to Hwang's method Nagase's retransmission method to remove the adverse effects of error correction codes.

6. Regarding claims 2 and 27, Hwang teaches (paragraph 71) decoding operation produces decoded information, the step of generating a first NAK signal including: selecting the first NAK signal value as a function of the quality of the decoded information.

7. Regarding claim 3. Hwang teaches NAK signal values are coded using phase, each one of the NAK signal values differing from one another in phase, the ACK signal value being communicated by a phase which is different from the phase of any one of the plurality of NAK signal values. In paragraph 52 Hwang describes performing retransmission according to the retransmission request).

8. Regarding claim 4. Hwang teaches (paragraph 80) NAK and ACK signals are complex signals and wherein said NAK signal values and said ACK signal values are phase values.

9. Regarding claim 5. Hwang teaches (paragraph 80) operating the first device to perform a decoding operation includes: determining the quality of decoded information generated by decoding said encoded information; wherein operating the first device to generate a first NAK signal includes operating the first device to select the first NAK signal value as a function of the determined quality of the decoded information; and wherein operating the first device further includes operating the first device to transmit the generated first NAK signal.

10. Regarding claim 6. Hwang teaches (paragraphs 53 and 80) determining the quality of the decoded information includes: maintaining decoding statistics indicating the reliability of the decoded information, said decoding statistics indicating the quality of the decoded information.

11. Regarding claim 7. as for the maintained decoding statistics include a count of the number of detected errors in the decoded information, it is inherent in Hwang's system the number of errors is counted in order to determine retransmission.

12. Regarding claim 8. Hwang teaches operating the first device to transmit said first NAK signal; and operating a second device to: receive said first NAK signal. While Hwang does teach using NAK signals, Hwang does not explicitly determine, from said first NAK signal value, an amount of redundant information to transmit to said first device from, different amounts of redundant information being determined for at least two different NAK signal values. Nagase teaches (col. 4, lines 10-20) a decoding method with retransmission according to the degree of error. This reads on applicant's NAK values. It would have been obvious to one of ordinary skill in the art to adapt to Hwang's method Nagase's retransmission method to remove the adverse effects of error correction codes.

13. Regarding claims 9, 28 and 29, Hwang teaches (fig. 6)operating the first device to: transmit the generated first NAK signal; receive in a second signal including redundant information corresponding to said first received encoded signal; perform an additional decoding operation using said redundant information and information obtained from said first received signal; and determine if the additional decoding operation successfully decoded the encoded signal information included in the first signal (Hwang teaches after determining in there is an error retransmission is performed (redundant

information) and the cycle continues for successful transmission occurs (ACK signal received)).

14. Regarding claim 10, Hwang teaches (paragraph 80) receiving a traffic channel assignment message from a second device; and identifying from information included in said traffic channel assignment message, the first signal to which said second signal corresponds.

15. Regarding claim 11. Hwang teaches (fig. 2) the first device is a mobile node and said second device is a base station; and wherein the information included in said traffic channel assignment message used to identify the first signal is an index of a traffic segment used to transmit the first signal.

16. Regarding claim 13. Hwang teaches (fig. 6) first device is a base station and said second device is a mobile node (fig. 2), the method further comprising: operating the second device to identify from information included in the uplink channel assignment message the first signal for which redundant information is to be transmitted in an uplink channel segment assigned by said channel assignment message Hwang teaches transmitting a NAK signal); and operating the second device to transmit said second signal including redundant information (Hwang teaches performing retransmission based on the NAK signal, paragraphs 52 and 80).

17. Regarding claim 14. Hwang teaches (paragraph 88) the information included in said uplink channel assignment message used to identify the first signal is an index of an uplink traffic segment used to transmit the first signal.

18. Regarding claim 16. Hwang teaches (fig. 6) in addition to said redundant information, new encoded information, the method further comprising: operating said first device to decode said new encoded information (Hwang teaches after determining if there is an error retransmission is performed (redundant information) and the cycle continues for successful transmission occurs (ACK signal received)).

19. Regarding claim 17. Hwang teaches (fig. 6) operating the first device to determine if the encoded signal information included in the first signal was successfully decoded by said additional decoding operation; and when it is determined that said encoded information was not properly decoded by said additional decoding operation, operating the first device to generate a second NAK (paragraph 71)..

20. While Hwang does teach using NAK signals, Hwang does not explicitly teach NAK signal having one of said plurality of possible NAK signal values, each of said plurality of possible NAK signal values corresponding to a different level of decoding success, operating the first device to generate a second NAK signal including selecting a second NAK signal value as a function of the quality of decoded information generated by said additional decoding operation.

21. Nagase teaches (col. 4, lines 10-20) a decoding method with retransmission according to the degree of error. This reads on applicant's NAK values. It would have

been obvious to one of ordinary skill in the art to adapt to Hwang's method Nagase's retransmission method to remove the adverse effects of error correction codes.

22. Regarding claim 18, Hwang teaches (paragraph 67) operating a second communications device to: perform an encoding operation on information to be transmitted to produce a first set of encoded information and a set of redundant information; and transmit said first set of encoded information in said first signal.

23. Regarding claims 19, 31 and 37, Hwang teaches (paragraph 80) operating the second communications device further includes operating said second communications device to: transmit in a traffic channel assignment message used to assign a traffic channel segment used to transmit said first signal, an indicator indicating that the first signal does not correspond to a previously transmitted signal.

24. Regarding claim 20, Hwang teaches (fig. 6) operating said second communications device further includes: operating said second communications device to: receive a NAK signal from said first device, said NAK signal corresponding to said first signal; and determine from the value of the received NAK signal what portion of the set of redundant information to transmit to said first device (paragraph 80).

25. Regarding claims 21, 32 and 38, while Hwang does teach using NAK signals, Hwang does not explicitly teach operating said second communication device to determine what portion of the set of redundant information to transmit to said first device

includes: selecting the size of the portion of the set of redundant information as a function of the value of the received NAK signal, a larger size portion being selected when the value of the NAK signal indicates a first level of decoding success than when the value of the NAK signal indicates a second level of decoding success that indicates more decoding success than said first level, Nagase teaches (col. 4, lines 10-20) a decoding method with retransmission according to the degree of error. This reads on applicant's NAK values. It would have been obvious to one of ordinary skill in the art to adapt to Hwang's method Nagase's retransmission method to remove the adverse effects of error correction codes.

26. Regarding claim 22. Hwang teaches (paragraph 80) operating the second communications device to transmit the determined portion of the set of redundant information to said first device in a second information signal.

27. Regarding claims 23 and 33, Hwang teaches (paragraph 80) operating said second communications device to transmit an assignment message used to assign a channel segment used to transmit said second information signal, said assignment message including information indicating the previously transmitted first signal to which the redundant information included in the second information signal corresponds, said assignment message being transmitted prior to said second information signal.

28. Regarding claims 24 and 34, Hwang teaches (paragraph 67 and fig. 6) operating the second communications device to: perform a second encoding operation on additional

information to be transmitted to produce a second set of encoded information and a second set of redundant information; and wherein operating said second communications device to transmit a second information signal includes operating the second communications device to include in said second information signal a portion of said second set of encoded information.

29. Regarding claims 25 and 35, Hwang teaches (paragraphs 67-69) the encoding operation is a low density parity check coding operation. 3

30. Regarding claims 30 and 43, Hwang teaches (fig. 6) a method of operating a communications device comprising: encoding, using an encoder (paragraph 67), information to be transmitted to produce a first set of encoded information and a set of redundant information (paragraph 71); transmitting said first set of encoded information in a first signal (paragraph 71); receiving a NAK signal from a device to which said first signal was transmitted (paragraph 80);

31. While Hwang does teach using NAK signals, Hwang does not explicitly teach selecting a portion of the set of redundant information to transmit to said first device as a function of the value of the received NAK signal, said function causing different amounts of redundant information to be selected for at least two different possible NAK signal values.

32. Nagase teaches (col. 4, lines 10-20) a decoding method with retransmission according to the degree of error. This reads on applicant's NAK values. It would have been obvious to one of ordinary skill in the art to adapt to Hwang's method Nagase's retransmission method to remove the adverse effects of error correction codes.

33. Regarding claims 36 and 44, Hwang teaches a communications device comprising: an encoder for encoding information to be transmitted to produce a first set of encoded information; a processing module configured to process received signals to recover there from communicated acknowledgement information (fig. 6) and a retransmission module to set of redundant information (paragraph 71); a transmitter for transmitting said first set of encoded information in a first signal (paragraph 71); a receiver for receiving a NAK signal from a device to which said first signal was transmitted (fig. 6);

34. While Hwang does teach using NAK signals, Hwang does not explicitly teach means for selecting a portion of the set of redundant information to transmit to said first device as a function of the value of the received NAK signal, said function causing different amounts of redundant information to be selected for at least two different possible NAK signal values.

35. Nagase teaches (col. 4, lines 10-20) a decoding method with retransmission according to the degree of error. This reads on applicant's NAK values. It would have been obvious to one of ordinary skill in the art to adapt to Hwang's method Nagase's retransmission method to remove the adverse effects of error correction codes.

36. Regarding claim 39 Hwang teaches a communications device comprising: a decoder module (paragraph 80) configured to decode a first signal including encoded signal information; a determination module configured to determine if the encoded signal information included in the first signal was successfully decoded; a signal generation module configured to generate acknowledgement signals, said acknowledgement signals

including an ACK signal having an ACK signal value, when it is determined that said encoded information was successfully decoded and a first NAK signal having one of a plurality of possible NAK signal values when it is determined that said encoded information was not successfully decoded (fig. 6).

37. While Hwang does teach using NAK signals, Hwang does not explicitly teach when it is determined that said encoded information was not successfully decoded, generating a first NAK signal having one of a plurality of possible NAK signal values, each of said plurality of possible NAK signal values corresponding to a different level of decoding success.

38. Nagase teaches (col. 4, lines 10-20) a decoding method with retransmission according to the degree of error. This reads on applicant's NAK values. It would have been obvious to one of ordinary skill in the art to adapt to Hwang's method Nagase's retransmission method to remove the adverse effects of error correction codes.

39. Regarding claim 40 Hwang teaches (paragraph 53) a quality determination module configured to generate and maintain decoding information indicating the quality of a decoded signal.

40. Regarding claim 41, Nagase teaches (col. 4, lines 10-20) a storage device including NAK level information, said NAK level information including discrete level information, said discrete level information including a plurality of NAK signal values, each possible NAK signal values corresponding to a different level of signal quality and a different phase.

Allowable Subject Matter

41. Claim 12 is allowed.

42. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

43. Applicant's arguments filed June 25, 2008 have been fully considered but they are not persuasive. Applicant argues that Hwang or Negase do not teach plurality of possible NAK signal values, each NAK signal value, in the plurality of NAK signal values, differing from any other one of the NAK signal values in said plurality by an amount which is less than the smallest amount any one of said NAK signal values differs from said ACK signal value. Applicant is directed to the above 112 rejection regarding this limitation. Applicant also argues that Hwang does not teach NAK and ACK signals are complex signals and wherein said NAK signal values and said ACK signal values are phase values. It is inherent in Hwang's system that the ACK and NAK signals or complex phase signals in that all modulated signals are complex phase signals.

Conclusion

44. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

45. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

46. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERTA A. SHAND whose telephone number is (571)272-3161. The examiner can normally be reached on M-F 9:00am-5:30pm.

47. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Firmin Backer can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

48. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Roberta A. Shand
/R. A. S./
Examiner, Art Unit 2416

/FIRMIN BACKER/
Supervisory Patent Examiner, Art Unit 2416

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	10/780,539	LAROIA ET AL.	
	Examiner	Art Unit	
	Roberta A. Shand	2416	